Abstract. This article explores the way the distinction between enhancement and therapy has been used in Catholic bioethics to assess the moral character of technologies that developments in genetics and neuroscience have made possible. The purpose of drawing lines between therapy and enhancement is typically to claim that the former is always ethically justified and the latter is morally suspect, if not altogether impermissible. The author connects the enhancement versus therapy distinction to concepts of human nature that ground it and examines the function of the distinction in these theological anthropologies. She argues that the distinction is insufficient for making decisions regarding use of neurotechnologies. Catholic ethicists thus need to explore alternative methods to begin the essential project of developing neuroethics. National Catholic Bioethics Quarterly 15.1 (Spring 2015): 63–72.

Gerald McKenny points out that bioethics has a penchant for “drawing and then erasing lines.” The discussion of enhancements is a prime example. The President’s Council on Bioethics articulated the commonly cited working definitions of “enhancement” and “therapy”: “‘Therapy’... is the use of biotechnical power to treat individuals with known diseases, disabilities, or impairments, in an attempt to restore them to a normal state of health and fitness. ‘Enhancement,’ by contrast, is the directed use of biotechnical power to alter, by direct intervention, not disease processes but the ‘normal’ workings of the human body and psyche, to augment or improve their native...
capacities and performances.” Yet the concept of enhancement has many meanings and implications. In bioethics, enhancement often functions as a useful reference to a topic of inquiry into any technology that seems novel and extreme. Those arguing against particular technologies tend to do so because of their status as enhancements, and thus enhancement functions as a “moral boundary concept.” In bioethics, for a technology to be immoral, it must be because it is an enhancement—and we are not supposed to enhance. The distinction also has practical significance, affecting practices relating to policy development and insurance coverage.

Even those who question the distinction or reject the moral difference between the two categories still use the language of enhancement and therapy to describe the technologies they are discussing. Ronald Cole-Turner points out, though, that “if we are going to address the topic of enhancement at all, we find ourselves drawing the therapy/enhancement distinction in order to limit the scope of the subject matter before us. And so it is that in almost every discussion of enhancement technology, the subject matter is defined as the use of technology, especially medicine, to ‘treat’ or modify human beings quite apart from any disease.” In other words, we imply the distinction in every conversation about enhancements. So given that we import ideas about treatment and enhancement into the entire enterprise of evaluating technologies, knowing exactly what we mean by enhancement and therapy is essential. Much discussion in bioethics has addressed this question.

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5 President’s Council, Beyond Therapy, 14.

6 For example, John Harris is highly critical of the concept of distinguishing between enhancement and therapy, but still uses the term “enhancement” in contrast to “therapies.” John Harris, “Enhancements Are a Moral Obligation,” in Human Enhancement, ed. Julian Savulescu and Nick Bostrom (New York: Oxford University Press, 2009).


8 Much of the discussion of this distinction in the literature concerns genetics. Given that the neurosciences also involve technologies that are both unprecedented and have great potential in changing humanity, I have relied on that discussion here. See Robert Brungs, Amalia M. Issa, and S. Marianne Postiglione, ed., Advances in Neuroscience: Social, Moral, Philosophical, and Theological Implications—Proceedings of the ITEST Workshop, September 2002 (St. Louis: ITEST Faith/Science Press, 2003).
The Distinction in Secular Bioethics

Those who initially drew the distinction intended to say that all therapies are good, but enhancements are unethical.9 For example, John Fletcher and W. French Anderson, among the first to comment on the distinction, said that we should draw a “moral line” between enhancements and therapies.10 Elsewhere, Anderson claimed “legitimate concerns about the potential for misuse of gene transfer technology justify drawing a moral line that includes corrective gene therapy but excludes enhancement interventions.”11 The conversation began with the assumption that we can and should draw this line. More recently, Michael Sandel drew a similar distinction: enhancement is bad because it is problematic to strive for mastery over nature, but therapy, a “medical intervention to cure or prevent illness or restore the injured to health, does not desecrate nature but honors it.”12 Built into Sandel’s definition are strong normative assumptions about respecting human nature as such.

In wider literature, many ethicists and theologians make passing reference to the difficulty of drawing a line between enhancement and therapy, but do not examine the difference itself.13 Most who do refer to this distinction are critical of it to varying degrees. Is the distinction an “empirical statement” or a “normative conclusion”?14 In other words, those critical of the distinction question the possibility of knowing the difference between enhancement and therapy, as this would require a substantive account of health and disease.15 Other thinkers circumvent the question and instead ask whether or not the difference between them has moral relevance.16

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14 I borrow these terms from David M. Frankford, “The Treatment/Enhancement Distinction as an Armament in the Policy Wars,” in Parens, Enhancing Human Traits.
16 See, for example, Nick Bostrom and Julian Savulescu, “Human Enhancement Ethics: The State of the Debate,” in Bostrom and Savulescu, Human Enhancement, 3; Deane-Drummond, “Taking Leave of the Animal?,” 116; Allen Buchanan, Better Than Human: The
The Distinction in Catholic Ethics

Generally, Catholic ethicists seem to be less critical of the distinction than secular ethicists and are more inclined to accept the distinction as a moral boundary or at least to be suspicious of enhancement. Yet the distinction is somewhat unclear and undefined in the Catholic literature. Pope St. John Paul II’s 1983 address “The Dangers of Genetic Manipulation” is foundational: “A strictly therapeutic intervention whose explicit objective is the healing of various maladies such as those stemming from deficiencies of chromosomes will, in principle, be considered desirable, provided it is directed to the true promotion of the personal well-being of man and does not infringe on his integrity or worsen his conditions of life. . . . It is of great interest to know if an intervention on genetic inheritance that goes beyond the limits of the therapeutic in the strict sense should be regarded likewise as morally acceptable.” John Paul II encourages therapies and provides some criteria for determining the morality of enhancements; for example, the intervention “must not infringe on the origin of human life” and must “respect fundamental dignity,” and we should avoid interventions that “create groups of different men at the risk of causing new cases of marginalization in society.”

Later, though, the Pontifical Council for Pastoral Assistance to Health Care Workers put forth a statement suggesting a slightly more conservative understanding of the distinction between enhancement and therapy. They imply that all enhancements would be immoral: “interventions which are not directly curative . . . are contrary to the personal dignity of human beings, to their integrity, and to their identity.” The difference in approach speaks to the lack of clarity about what enhancements are, or how we are to respond to them from within the Catholic tradition. In addition, these documents were responses to concerns related to altering the genetic nature of an individual, but in the neurosciences, the issues are even more complex.

Human Nature as Normative

Rev. Benedict Ashley, OP, acknowledges the difficulty and attempts to address this problem by pointing to human normality, much in the same way Norman Daniels does. Referencing positive psychology—the study of the normal person—Ashley comments, “It should be difficult, but possible, to determine a general range or pattern of normality. There will be border cases, but eventually we will have to do this socially for the reason of enhancement.” In other words, Ashley thinks it is

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18 Ibid.


21 Brungs et al., *Advances in Neuroscience*, 162.
possible and necessary to draw a moral line between enhancement and therapy, even if it is not perfect. Elsewhere, with Rev. Kevin O’Rourke, OP, and Sr. Jean deBlois, CSJ, Ashley states that use of technology “for therapeutic purposes is ethical, but the proposals to use it to enhance human nature threaten the survival of the human species.”22 Clearly, according to Ashley, the distinction between enhancement and therapy is very important in determining the ethical nature of particular interventions.

Other authors in the Catholic literature also imply acceptance of the distinction between enhancement and therapy or use it in analyses of technological interventions. For example, Paulina Taboada argues against critics of the distinction and claims that it is essential to identify interventions that are in accordance with human dignity.23 She believes drawing a moral line between the two is possible and necessary and that the distinction is “fundamental in discussions about the ethics of human gene transfer.”24 Others claim the distinction is useful if we are to know the obligations and goals of medicine.25 Still others use the distinction normatively without acknowledging they are doing so.26

Even though the trend in the Catholic literature on enhancement technology is to use the distinction, not all Catholics interpret it in the same way. For example, Rev. Robert Brungs, SJ, alludes to a possible approach to determining the morality of an intervention: “It’s a question of why we were working for enhancement. Is it for the reason of the therapy or for enhancement for its own sake? Working for therapeutic reasons seems to me to be different from working . . . for the enhancement itself.”27 For Brungs, the distinction is not normative, but instead the intention to enhance or treat is the morally relevant factor. Thus, the moral difference between therapy and enhancement does not depend on being able to distinguish between the two in every case and it is not necessary to know precisely what we are doing before we can intend a good that is a foreseeable consequence of that action. This approach based on intention solves some of the difficult “grey area” circumstances, especially those arising with the use of neurostimulation or other technologies, the mechanisms of which we are not certain. According to Brungs, the intervention would be permissible as long as therapy is intended.

24 Ibid., 192.
27 Brungs et al., *Advances in Neuroscience*, 167.
The main point I wish to emphasize is that those who accept the enhancement versus therapy distinction often do not give adequate accounts of the anthropology underlying this distinction. When they do attempt to give content to the meanings of health and disease, as Ashley does, they use accounts similar to the secular ethicists, which are void of theological content. Even Brungs’ approach, which circumvents the problem of distinguishing correctly between enhancement and therapy in every case, still requires an account of normativity. Underlying his account are ideas about health and disease and human nature that remain undefined.

Technologies should be judged on whether they are in accord with human nature or contrary to it. This at least gives us some theoretical idea about health and disease, but in practice it may mean that distinguishing between enhancement and therapy is not the way to determine which interventions are permissible (as Catholics ethicists to date seem to think it is). Moreover, a Catholic vision of human nature tells us more about the person than just our biological nature. There is also the health or disease of our rational, volitional, and relational capacities, and these other ontological characteristics of the human will be relevant in discussions about Catholic neuroethics; but they have not been part of the discussion on enhancement versus therapy thus far.

Rev. Kevin Fitzgerald, SJ, begins to address these problems. His argument is essentially that the distinction is too reliant on the changing landscape of science. Progress in research and technology may “challenge or contradict the ideas of what is normal or good for human beings found within a given philosophical anthropology.” In other words, the scientific community does not have one single account of “normal” from which we understand what it is to be “healthy.” With no sound scientific anthropology to rely on, it is necessary to question our conclusions about enhancements and therapies based on scientific knowledge. In search of a better way to make decisions about technologies, Fitzgerald outlines several philosophical anthropologies, arguing in favor of Karl Rahner’s dynamic anthropology because it can change as scientific information changes. If one were to understand the issue of enhancement through this lens, the enhancement versus therapy distinction would no longer be relevant to the problem, Fitzgerald claims. We would instead have to be more attentive to questions about human nature other than those of biological health and disease.

Theological Anthropologies and Neuroethics

Catholic ethicists begin with an understanding of the dignity of the human person made in the imago Dei (the image of God) and called to pursue human flourishing. An ethic based on Thomistic natural law understands the person to have biological, rational, volitional, and relational natures, all of which are substantially united in the

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29 Ibid., 90–92; or Fitzgerald, “Knowledge without Wisdom,” 154–156.

30 Fitzgerald, “Need for a Dynamic and Integrative Vision,” in Sowle Cahill, Genetics, Theology, and Ethics, 88.
human person. Theologians have developed several (sometimes competing) Christian anthropologies out of this common foundation.

For St. Thomas Aquinas, human rationality—the ability to reason—is the primary way humans reflect the image of God.\(^{31}\) Rev. Jack Mahoney, SJ, acknowledges that rationality is “historically the most popular human characteristic that is considered to reflect the divine image.”\(^{32}\) Yet this widely accepted view does not provide us with enough of a concept of human nature to know if we are enhancing or treating it. Cognitive enhancements are intended to improve intelligence and rationality. So, in one sense, these types of interventions could be considered making human nature even more perfect. Instead of destroying, modifying, or detracting from human nature, it could be that they help fulfill human nature. For example, Ashley claims that “to perfect human intelligence and free will would be fine, since it is highest in human nature.”\(^{33}\) Ashley also points out that we have partially lost our intended human nature because of original sin. In this sense, there would be no concept of cognitive enhancement because all interventions aimed at improving cognitive functions are therapies to help us return to human nature as it should be. Given this account of human nature, enhancement and therapy are not helpful categories in addressing neurological interventions that will affect cognitive and intellectual function.

Another common way of describing the meaning of the *imago Dei* is to emphasize human freedom and creative capacities. In “The Problem of Genetic Manipulation,” Rahner claims that freedom and self-determination are central to what it means to be human. One way Rahner argues it is possible for humans to express their freedom is by “self-manipulation,” a capacity built into human nature to move us from the “passive biological evolution” of the past to an “active evolution” in which human nature is fulfilled.\(^{34}\) Another way to describe this dynamic anthropology is to say that the human is a “co-creator” with God.\(^{35}\) Like Rahner, both O’Rourke and Fitzgerald also advocate for our power to create and shape nature, which for them means we can also affect the human person.\(^{36}\)

Though Rahner sets limits to manipulations that could reduce relationality, and worse, freedom,\(^{37}\) some have taken this type of theological anthropology to

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\(^{31}\) Thomas Aquinas, *Summa theologiae* I-I.93.6


\(^{33}\) Brungs et al., *Advances in Neuroscience*, 164.


justify the most extreme transhumanist views, including existence as cyborgs.\textsuperscript{38} In this account, nature is evolving and altering, so to modify nature is to fulfill human nature. Given this account of the person, there would be no need to distinguish between enhancements and therapies because enhancement is not contrary to human nature but a fulfillment of it.

Another way to understand the human person is as an image of the Trinitarian God. Trinitarian anthropologies look to the relationality between God the Father, God the Son, and God the Holy Spirit to show that humans are made to be in relationship, and that how we love others is central to how we should see ourselves.\textsuperscript{39} Humans are created in the image of the Trinity, who exists as three persons in relationship. Therefore, human relationship and community is at the heart of the human person, and this anthropology can be a normative framework for moral decisions about technologies that could affect our relationality. Trinitarian anthropologies would determine the moral permissibility of an intervention on the basis of how it affects our relationships and our ontological relational capacity, the ability to be-in-relationship. Again, given this anthropology, the enhancement versus therapy distinction is not relevant. Determining the moral character of a particular intervention consistent with this anthropological vision is concerned less with whether the intervention is an enhancement or a therapy, and more with how that intervention ultimately affects human experience in relationship and ability to be in relationship.

Though the enhancement versus therapy distinction is not useful within the context of these three theological anthropologies, it would be a useful tool in a classic natural law approach to human nature. As Thomas Shannon describes, “In this tradition, one uses the order of nature as the basis upon which one elucidates moral principles. . . . Because this order of nature is normative, one can legitimately argue that nature in this perspective is a conservative or limiting principle . . . [because] it sets up limits or bounds beyond which one may not go.”\textsuperscript{40} Fitzgerald refers to this way of understanding the human as “static,” and Shannon describes it as an account that sees nature as a “limit.”\textsuperscript{41} Important to these accounts are physical characteristics, which are considered normative. As such, the way an intervention affects the physical person may limit morally permissible options. An example of this type of anthropology at work is the classic teaching of the Church that built into the nature of the sexual act are the unitive and procreative meanings, which must never be separated. Interventions like contraception, sterilization, and in vitro fertilization are morally illicit because they are contrary to nature. In these cases, going beyond what


\textsuperscript{39} See Catherine Mowry LaCugna, God for Us: The Trinity and the Christian Life (San Francisco: Harper San Francisco, 1992); and Mark S. Medley, Imago Trinitatis: Toward a Relational Understanding of Becoming Human (Lanham, MD: University Press of America, 2002).

\textsuperscript{40} Thomas A. Shannon, “Ethical Implications of Developments in Genetics,” Linacre Quarterly 47 (1980): 351.

\textsuperscript{41} Fitzgerald, “Knowledge without Wisdom,” 154; and Shannon, “Ethical Implications,” 351.
is already proscribed by nature is immoral, but therapeutic restoration of nature is still desirable. Within the context of this anthropology, it then makes sense for the enhancement versus therapy distinction to be the way to gauge the moral permissibility of an intervention.

These accounts of human nature are not mutually exclusive. All of them pick up on something that is true about the human person, but choosing which element to emphasize would result in different conclusions about whether an intervention was an enhancement or a therapy, or whether it matters. In many of these anthropologies, it is not the preservation of a human’s biological nature alone that is normative, but the multidimensional human person, accounting for how we reason, how we create, and how we relate.

### The Limitations of Neuroscience and Epistemological Uncertainty

Obviously, if the account of human nature is to have any normativity or ethical relevance, it is necessary to know what that nature that should not be altered is, and how interventions might affect it. Kurt Bayertz, though writing outside the Catholic tradition, describes the problem: “The first step towards such a normative concept of human nature must consist of as accurate as possible a definition of what we are to understand by this definition. Even if no absolute precision can be expected, it is obvious that the definition can only fulfill its practical function—to deliver a criterion for the differentiation between legitimate and illegitimate biotechnological interventions—if it allows an adequately distinct demarcation between what is humanly ‘natural’ and what is ‘unnatural’.” 42 Though in sexual ethics, natural law accomplishes this goal and makes possible a general moral position for every particular instance in which that action happens, this is not the case in neuroethics given the biological complexity of psychiatry and neurology. Similarly, as Andrew Lustig notes, “A general Catholic position ‘for’ or ‘against’ a range of interventions cannot be formulated without attending to the actual techniques involved in particular circumstances.” 43 In other words, anthropologies would have to be based on current biological research. But there has been so little understanding of neuroscience until now, as we are just beginning to use fMRIs and other tools to obtain biological information about the brain.

The reality is that we do not know that much about the brain. But for the normativity of nature to mean anything, we need to know exactly what that nature is or what it should be, which is not yet the case in the neurosciences. Norman Daniels even points out that mental health presents difficulties for his normal functioning model, because “we have a less well-developed theory of species-typical mental

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functions and functional organization." This problem would also cause difficulties in defining what is “natural” when it comes to mental health, and thus what an enhancement above nature would look like.

The same problems apply to the interventions we use in clinical neuroscience and psychiatry. For example, researchers studying neurostimulation to treat depression do not know exactly what they are doing or how the treatment works. Instead, they note that individuals receiving these treatments for Parkinson’s disease and other diseases report an improvement in mood after the intervention. Then, by randomized control trial, they confirm these treatments may be effective in treating depression but can only hypothesize why. Also, because of our lack of understanding in neuroscience, even if we were able to come to a crude understanding of psychiatric or neurological health and disease, there will be significant grey areas in determining the difference between what is enhancing and what is normal.

When using neurostimulation, how are we to know at exactly what point the disease has been cured and that we are now enhancing above the natural? There is a problem for these accounts if we can never tell when we have crossed the lines between treatment and enhancement. Also, what are we to do when enhancements are side effects of treatments, as they might be when using deep brain stimulation to treat Parkinson’s disease? The Church does not claim to have definitive responses to all of the particular questions that may need to be answered. In moral analysis of neurotechnologies, we should recall *Gaudium et spes*, which says, “The Church guards the heritage of God’s word and draws from it moral and religious principles without always having at hand the solution to particular problems.”

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44 Daniels, *Just Health Care*, 29. Though, he claims that his theory can be extended to cover these things anyway.
